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UTCS ComputerNews

FEATURES

Let's Talk About It: New Name, New Location	1
Changing Times, Changing Names, Changing Places	1
A Day in the Life of Advising Services	4
The Microcomputer Support Group	4
The Text/Imaging Support Group	5
The Statistical & Numerical Analysis Computing Group (SNAC)	6
Networking: a UNIX Perspective	8
ComputerNews: The New Look	10
New Column In *ComputerNews*	10
Noise on Dial-In Lines: Update	11
Sharing Microcomputer Experience	12
Personal System/2 Updates	12
DOS 3.3 Problems	13
New Macintosh MultiFinder	14
Macintosh SE Problem	14
Hours of Service	14
FIRST INTERNATIONAL CONFERENCE ON INDUSTRIAL AND APPLIED MATHEMATICS	15
BMDP '87 Available for Testing on MVS	16
Information Centre Orientation	18
News About Microcomputer Short Courses	18
UTCS Noncredit Computer Courses	19
ProComm Communications Program Seminar	20
Free NetNorth (Electronic Mail) Demonstration	20
Personnel Changes	20
Accounting Services	21
Special "Usage Credit" Offer	21
Protect Your Codes	21
St. George Campus – Undergraduate and Research Access to UTCS	22
Welcome Back – Erindale	23

DEPARTMENTS

Documents at UTCS	25
Consulting and Enquiries	27
UTCS Directory	27
Committees on Computing	27
UTCS Terminal and Advising Services	28
UTCS Services	29
UTCS Software List	30

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Let's Talk About It: New Name, New Location

Dr. Warren Jackson
WCJ at UTORONTO

[This article is not subject to editorial review.]

Gentle Reader: We are considering changing our name and we are moving two major pieces of our organization into what will hopefully be their final location. Don Gibson's article gives more details, but I will proselytize a bit about both developments here. A new name for UTCS would more correctly reflect the evolution of the actual nature of our organization and what we do. The new name should be in keeping with our major thrusts in networking, micro support, facility management, and the exploration of cooperative ventures with the Library. These activities are all consistent with our mandate and strategic directions, which were presented in the December 1984 issue of *ComputerNews*. We are open for suggestions for a new name. One we have considered is Information Technology Services, but this may be perceived as too broad. Any suggestions? (Try to be serious and keep it clean!) We'll offer a valuable, yet-to-be-determined prize if we choose your suggestion.

The move is into new space in the former textbook store (a building apparently without a name, though we suggest the Bancroft Building). The move should allow both groups moving, the Information Centre (née User Interface Group) and Communications and Technical Support, to serve you better through facilities which have been much improved. These groups, after having been bounced around, and generally having been perceived as interlopers in what others have viewed as their space, hopefully have found a final home. Our preference, naturally, would be to have all of UTCS in a single location, but whether this is possible will be resolved in the fullness of time. For now, the remaining parts of UTCS including the Machine Room, Management Office, the Accounting Office, and Systems Support Office remain on the third floor of the McLennan Laboratories. Whether they will ever move is beyond me, though I know Physics would certainly like to have the space. Both the name change and the move will be to your ultimate benefit; we ask your indulgence during the settling-in period.

Changing Times, Changing Names, Changing Places

Don Gibson
DON at UTORONTO

To understand that the electronics industry is one of the most rapidly changing industries is to have a firm grasp of the obvious. As advances in technology make computing equipment increasingly affordable and as computer applications become increasingly usable by everyone, a central support organization such as UTCS must evolve to maintain its viability. And, indeed, UTCS has been evolving.

At one time, UTCS – and its predecessors, the Institute for Computer Science and the University of Toronto Computer Centre (UTCC) – was the source of most computing on campus. Now, UTCS computers account for only a small percentage of the computer power on campus, though it is impossible to quantify that percentage, since increasingly powerful microcomputers are now bought and sold so actively. Indeed, it is unlikely that anyone knows just how much computer power or how many computers there are on campus.

More and more, our role has become one of supporting new information technologies, not selling computer time. (Last year, for the first time, more UTCS revenue came from services than from the sale of mainframe cycles.) This trend has shown itself in a number of ways. For example, we have become managers of other people's equipment, we provide campus network support, and we train and consult on the use of information technologies.

In 1979, the name Computing Services replaced Computer Centre because it was felt that our focus belonged more properly on the services associated with computing than on the machines themselves. In 1987, we feel that it is time once again to recognize our evolving role by changing our name to reflect our purpose more clearly. While computers and computing will certainly continue to be a part of our lives, we believe that a new name will better identify what we do.

continued...

Changing Times, Changing Names continued.

I am delighted that as a part of this name review, I have had the opportunity to rechristen my own group. Frankly, the name User Interface Group has always seemed appallingly mechanical and impersonal. It seems to imply that the "user" (another less than optimal term) must somehow be folded, spindled, and mutilated to conform to the machinery, and that my group must carry out the dirty work. From now on, we will be known as the Information Centre.

While the evolution of our services has made the time right for name changes, the immediate impetus for changing is the impending move of the Communications and Technical Support Group and the Information Centre to new quarters. Since every move brings the adminstrivia of changing letterhead, business cards, and so forth, this is an opportune time for the name change.

The Information Centre has been temporarily housed in the Koffler Centre while the old Textbook Store (TBS) was being renovated. The work on the TBS should be finished by mid-October. Our staff, Physical Plant, and Bell Canada will then complete the preparations, with the move into the building scheduled for the end of October. Since we have been busily straightening out names, it seems reasonable that we now stop calling the new location the Textbook Store (which it isn't anymore). Although the decision is not up to us, our suggested name is the Bancroft Building, because Bancroft Hall now adjoins the building and because the construction on the site has been labelled the "4 Bancroft Project."

We are very much looking forward to our new location not only because it will be pleasantly renovated, but also because it has been designed with the function of the area in mind. (Our previous surroundings have always been intended initially for some other purpose, with our occupancy forced into the existing accommodations.) The Micro Lab, for example, will be well provided with counter space and cable trays; hopefully the spaghetti jungle will be neatly enclosed. And the unfortunate students who suffered with the inadequate air conditioning of our current classroom will be pleased with the new classrooms.

Most significantly perhaps, the new quarters will allow us to advance in our strategic direction. The marriage of Information and Technology is of key importance to our organization overall, and the Information Centre assists individuals and groups within the University in making efficient and effective use of information technologies. Our new facilities will support this in at least two major ways.

First, there will now be enough space for a second classroom, which will make it possible to expand our short course program. With more people becoming personally involved in using information technologies, the need to inform and teach has grown. Since last fall, when we were able to outfit our classroom with microcomputers, our short course offerings have become extremely popular. We are pleased to announce that we are now able to offer courses on products based on the Apple Macintosh, thanks to the generous donation of 11 Macintosh SEs by Apple Canada. During the summer, we have used the SEs to develop courses and to expand our staff's knowledge of Macintoshes and Mac products. As you can see from the article "News About Microcomputer Short Courses," we are now ready to offer several new courses.

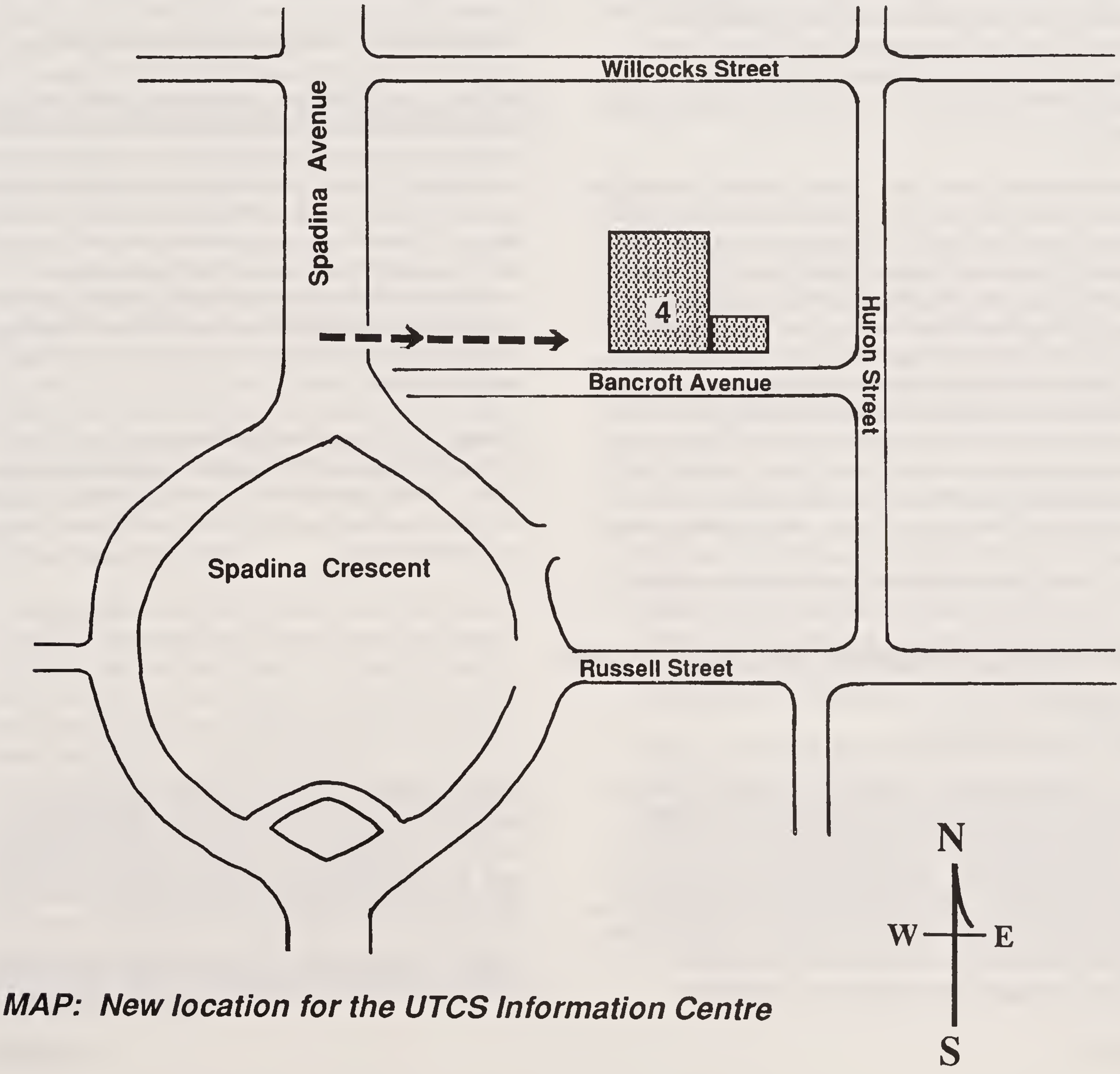
Second, the new quarters will permit us to amalgamate the Micro Lab and the Information Office library. Initially, it might seem strange to merge the Micro Lab with the library, but I think the two areas fit together very well for several reasons. The most important and central of these is that the two areas serve a similar purpose, i.e., both are information resource centres. People have regularly gone to our library to find information about machines and software. Soon people will be able not only to read about products but also to try them out at the same time. Increasingly, information is being packaged in forms that require machines to be readily available. The use of compact disks to store fixed text is perhaps the best example of this trend.

continued...

Changing Times, Changing Places continued.

Another reason for combining the Micro Lab and the library is that we now have a fairly large collection of software and machines; the associated problems of cataloguing and storing and record keeping are in some ways analogous to other library activities. The merger of the two areas allows us to maximize the efficiency of our staff. We will be able to give new and challenging responsibilities to our Information Office staff, while freeing some time for consulting by the senior micro specialists.

As you can see, a number of changes have been in progress over the summer. We are really excited about our new facilities, and we think that you will find them and our new services to be positive steps toward serving your needs. We urge you to visit us, in Room 308 of the Koffler Centre until the end of October, and after that, in the Bancroft Building. For a while it will be a bit difficult to find us in the Bancroft, since it is nearly surrounded by the construction of the Earth Sciences complex, but the map below should show the way. ▒



MAP: New location for the UTCS Information Centre

A Day in the Life of Advising Services

Alex Nishri
nishri@gpu.utcs
NISHRI at UTORONTO

It's ten o'clock Wednesday morning, and the phones have started to ring. Dariusz Dabek reaches for the receiver and pushes the first of three flashing buttons. Nearby, in the Micro Lab, Alicia Damley stands behind a person seated at a Macintosh and listens as he explains a problem in printing a document on the laser printer. Reinhard Schuller, sitting beside Dariusz, is typing at a PC, trying out some WordPerfect commands to see if they will solve a problem that was phoned in the previous day. Elsewhere, Steve Younker, handling some electronic mail that was misaddressed, is checking the electronic address of a university in Europe. And Jon Alexander is still not back from a daily meeting where problems are brought to Management's attention. Another day in Advising has begun.

The first person to call tells Dariusz that she just bought a new printer and can't get it to work with WordPerfect. Dariusz has heard of the problem before and explains how to set the printer type in WordPerfect. The next caller is using the UTCS Bulletin Board System and needs some help downloading a file. Dariusz goes through the procedure with the caller and suggests that if a demonstration would be helpful, they can make an appointment. Another person calls to say he is planning to buy a microcomputer for word processing and needs advice on which one to buy. Dariusz sets up an appointment for him with one of the Product Specialists in the Imaging Group, where needs can be explored and alternatives discussed. Then someone calls with a problem accessing a magnetic computer tape from CMS, one of the mainframe services. An appointment with Jon is arranged for later in the day.

Advising Services is available at 978-HELP anytime Monday through Friday between 10 a.m. and 6 p.m. We can answer most short technical questions over the phone. Questions not easily answered on the phone are handled through an appointment with one of the Advising Consultants. If Advising can't get the answer to your problems, we can call on Product Specialists and other experts at UTCS.

Now it is 4:30. Russell Owen, one of the part-time Advisors, is answering questions over the phone. The Advising Consultants are each meeting with people who have asked for appointments. Jon's appointment is about the magnetic tape problem that was phoned in this morning. Steve is helping a researcher who wants to use her Macintosh to connect to an electronic mail service. Dariusz is helping an instructor who is trying to use Lotus 1-2-3 to store student grades. Alicia is showing someone else how to use a terminal emulator package on the Macintosh. And Reinhard is helping a faculty member to plan for a course that uses Macintosh computers.

Whether it's a question about Macintosh, the IBM PC, or one of the supported mainframes, Advising is there to help. If you need some information, advice, or want to give us feedback, we would be glad to hear from you at 978-HELP. ▨

The Microcomputer Support Group

Paul Roth
PROTH at UTORONTO

UTCS' Microcomputer Support Group (MSG) provides the University community with information on using microcomputers, either on campus or at home. Each member of the MSG – Paul Roth, Chris Handley, and Terry Sanderson – has many years of experience in the microcomputer field. Although most of our efforts in the past few years have been concentrated on IBM-oriented hardware and software, our scope has broadened more recently to accommodate the increased presence of the Macintosh, and we expect to expand our support of the Atari ST and the Amiga as well. We also advise on Local Area Networks (LANs), which have been proliferating on campus.

Much of our work involves helping people decide what kind of equipment or software to acquire. If you are

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The Microcomputer Support Group continued.

unsure of which micro or which software package best meets your needs, please get in touch with us. Although we cannot make the decision for you, we will try to give you enough information to make an intelligent choice. We can also arrange to test a package or board in our Micro Lab, so that you can be sure it works before you purchase.

Naturally, we spend a great deal of time with microcomputer users, helping them learn to use particular packages or pieces of hardware. We provide assistance on a wide variety of needs and applications. For example, we might help you solve a printer problem, set up your hard disk, or test a modem. We might also advise you on how to organize your dBASE III program or help you get the feel of a word-processing package for the first time. Our particular software expertise is in the database area (most other software applications are also handled by other specialist groups within the Information Centre); as mentioned above, LANs are a major interest as well.

Another of our activities is evaluating hardware and software. We usually publish our results in the *Academic's Guide to Microcomputer Systems* and on the UTCS Microcomputer Bulletin Board System.

If you are a University faculty or staff member, graduate student, or researcher, the Microcomputer Support Group may be able to help you. Please note that, because of the demands on our time, we can offer consultations by appointment only. For more information, call 978-HELP. ▨

The Text/Imaging Support Group

John Bradley
BRADLEY at UTORONTO

The Text/Imaging (T/I) Group is responsible for developing and supporting text processing and graphics for UTCS' microcomputer and mainframe users. In addition, we work with the University's new Centre for Computing in the Humanities to develop software for various humanities disciplines. We are currently located in the Koffler Centre, Room 308, but we will soon be moving to UTCS' new site in the Bancroft building.

Microcomputer Service

During the past year, the T/I group has been focusing its attention where all the action is in text and graphics: on micros and micro users. Two factors have influenced many of our activities. First, the number of PostScript printers and programs to drive them has grown dramatically during the past year. UTCS has been watching the PostScript phenomenon since the announcement of the Apple LaserWriter in late 1984. By 1986, we felt that PostScript had become the standard for page-description languages, so we purchased several PostScript laser printers and the Linotronic 100 PostScript typesetter. We have since been able to assist many people in producing high-quality output and have gained considerable experience with PostScript.

The second development to affect our area in the past few months is the new set of Macintosh SEs in the Education Facility, a generous gift from Apple Canada. We have been working on courses for the Macintosh since the beginning of the year, and you will soon be seeing the fruits of our labours in this area.

Our micro-related activities are centred in several specific areas.

- **Microcomputer Support:** We answer your questions about word-processing, graphics, and page-makeup software. We can help you if you are choosing new software, or if you run into problems with software you are already using.
- **Micro Word-Processor Training**: During the past year, we have offered several very successful courses in WordPerfect. We have trained over a hundred new users and have assisted existing users in acquiring new skills. This fall we will be offering courses for the Macintosh community. A Microsoft Word 3.0 course has been scheduled,

continued...

The Text/Imaging Support Group continued.

and a course in Aldus' PageMaker is in development. More details about these and other courses can be found elsewhere in this issue of *ComputerNews*.

- **Laser Printing**: Since last fall we have made high-quality laser printing available to both the microcomputer and the mainframe communities. Our prices are significantly lower than those available off campus!
- **Typesetting**: As an extension to our laser printing services, we have a Linotronic 100 PostScript typesetter. This device is a true typesetter: it produces output on photographic paper at a resolution of up to 1270 dots per inch and is capable of printing both text and graphics. Coupled with a PostScript laser printer (such as UTCS' Apple LaserWriter) to act as an inexpensive proofing device, this setup provides typesetting services at a price competitive with services available elsewhere.
- **Polaroid Palette**: This device allows you to prepare graphic material on an IBM PC and transfer the image to slides or photographic paper. It is the most inexpensive way to produce high-quality graphics and text on slides.
- **Desktop Publishing**: We have taken a special interest in the desktop publishing revolution, since we think it is of great significance to the University community. Not only do we have suitable high-quality printing facilities with our laser printers and typesetter, but we have also been developing expertise on much of the desktop-publishing software on the market.

  Desktop publishing can be of assistance in producing anything from a brochure to a textbook to a thesis. If you do anything that involves the layout of text, you may be interested in our "Introduction to Desktop Publishing" seminar.

Mainframe-Oriented Computing

For many years, the focus of the T/I group was on mainframe-oriented computing. In this area UTCS continues to offer:

- **Text Formatters**:
  - SCRIBE (on CMS)
  - *troff* and associated packages (on GP UNIX)
  - $\TeX$ (on GP UNIX)
  - WSCRIPT (on CMS and MVS)
- **Output Devices**:
  - Xerox 8700 Laser Printer (line printer and pseudotypesetting)
  - Calcomp pen plotter (4-colour)
  - Gould Plotter

I am always interested in hearing new ideas about what we could be doing. If you have any comments, please give me a call at 978-3995. ▩

The Statistical & Numerical Analysis Computing Group (SNAC)

Dr. W. Fehlner
FEHLNER at UTORONTO

The Statistical and Numerical Analysis Computing Group (SNAC) is responsible for supporting applications software for statistical and numerical analysis. A major component of this support is consultation on the selection and use of software, including both microcomputer packages and mainframe packages available through CMS, TSO, and GPJS. This consultation is available to faculty, staff, and graduate students at the University. The SNAC Group also maintains a collection of magnetic tapes containing Canadian Census data and provides support to the Centre for Large Scale Computation in their short courses.

The statistical consulting we offer includes discussion of the statistical and computational issues that concern users at any phase of project development: the

continued...

The SNAC Group continued.

experimental design and relevant statistical procedures, the choice and implementation of appropriate software, and the interpretation of the output.

Over the past six months, new versions or releases of several statistical software packages have been put into user test on both MVS and CMS. In general, these new versions are moving to production status in September, and the older versions will be removed in September or as soon thereafter as possible.

An article in the July/August issue of *ComputerNews* summarizes the details of these upgrades, and the UTCS Software List at the back of this issue indicates the current version of each product. Instructors should be incorporating the latest versions of products in course plans, and researchers should be testing programs with the current versions. Members of the SNAC group are available to consult on all conversion efforts. Written documentation on these products is available for reference in the UTCS Information Office, Room 206, Engineering Annex. Personal copies of vendor-supplied manuals can be ordered at the Information Office as well. Please call 978-HELP with your questions on conversions or to set up an appointment to discuss these new software products.

As of September 1, the SNAC Group had distributed124 copies of SAS/PC at the University. A new version of SAS/PC will be distributed this fall. It will include changes and enhancements to the BASE and STAT modules as well as the new GRAPH and FSP modules. As part of the renewal process last June, users were surveyed on their needs for additional modules. Eleven expressed an interest in the Interactive Matrix Language module(IML). More discussions with users will be held this fall to confirm these results and to determine training needs.

Two short courses were developed this past year to train users in SAS/PC at the introductory and intermediate level. The introductory course, SASPC101, will be offered every month through the fall and winter terms, while the intermediate course, SASPC201, will be offered as demand warrants. In addition, courses related to the new SAS modules may be developed during the coming year.

Several microcomputer statistics packages running under MS-DOS have been made available for demonstration (see “Statistics on the IBM PC” in the April issue of *ComputerNews*). The SNAC Group has also demonstrated Sigma Plot, a scientific graphics package, to a number of potential users. We are currently working with the Microcomputer Support Group to acquire demonstration copies of statistical packages for the Macintosh line of personal computers.

In addition to teaching our own courses, members of the SNAC group are available to work with course instructors, helping to develop introductory sessions for courses that require students to use statistics or numerical-analysis packages. The UTCS Education Facility can be booked in order to provide a hands-on component in these sessions.

Two members of the SNAC Group attended the SAS Users Group International Conference (SUGI) last February. Joyce Bernstein has been an active participant in the Toronto Area SAS Society (TASS), which meets every two months. TASS has also organized a two-day regional meeting of SAS users for the last week in September.

Andrzej Pindor attended the International Conference on Industrial and Applied Mathematics in July. He shares his impressions of the conference in another article in this issue of *ComputerNews*.

With frequent new product offerings in the micro area and continual development by software vendors, the SNAC Group continues to expand the range of its services. Please call me at 978-6509 if you would like to discuss the directions that we are taking. ▨

Networking: a UNIX Perspective

Rayan Zachariassen

If you have ever sent an electronic mail (E-mail) message to someone on a computer other than the one on which you have an account, you are among the growing population of computer networking users. The ability to send mail to friends, colleagues, and contacts has become so entrenched in some areas that any interruption or obstruction of the flow of messages is cause for major concern. Although E-mail is perhaps the most visible indication that networks are all around us, there are other interesting things being done on the campus networks.

The campus network is made up of many smaller networks. It has developed gradually as individual groups and departments have set up their own local networks and then found the wherewithal to connect to other local networks. In many instances, interconnection is provided by the UTCS-managed backbone network, which runs through much of the campus and provides the essential links between otherwise isolated local networks.

Two major communications protocols are in use on campus (others are used for special-purpose systems without large user populations). They are TCP/IP (Transmission Control Protocol/Internet Protocol), which grew out of research in local and wide area networking in the 1970s, and DECNET (Digital Equipment Corporation's proprietary protocols); they split the campus networks into two main groups. One group of over 180 machines runs UNIX and TCP/IP, the other group of about 30 machines, primarily Physics and Medical Science, runs VMS and DECNET. Often two or more protocols share the same physical cables with no adverse effect on one another. For example, the UTCS general-purpose backbone supports TCP/IP, DECNET, and XNS (Xerox Network Services), which is used by the Network Terminal Servers (NTS). Another example is the Computer Systems Research Institute Ethernet, where TCP/IP, CHAOSnet (developed at MIT), and XNS protocols share one cable.

If a computer that only knows about one protocol wants to communicate with a computer that only knows another, some kind of gateway is needed to supply the appropriate translation. Indeed it is not uncommon for a single computer to support several protocols. With such gateways (i.e., machines attached to several networks), it is possible to communicate between a pure TCP/IP machine and a pure DECNET machine on different physical cables, by using intermediate hosts to translate protocols and to forward the data appropriately. A few machines on the campus network can understand both protocols and act as bridges and gateways of various kinds. For example, from the GP UNIX machine, you can use a command called *telnet* to remotely access any other UNIX machine on the network (a slightly customized version of this program can be used to log in to CMS from any UNIX machine). A variation on the same idea allows one to access any DECNET machine as well, even though GP UNIX does not currently know anything about the DECNET protocols. A UTCS machine that can speak to both a VMS (DECNET) and a UNIX (TCP/IP) host has been designated a mail gateway for the VMS machines. This allows UNIX users to send mail to VMS users with an address of the form "user@host.decnet". Similarly, VMS users can communicate with the non-DECNET nodes on the campus network.

The campus network is not limited to the exchange of internal messages; it also accommodates E-mail destined for outside the University. Typically, mail going off campus will leave through one of the mail gateways. Three of the major gateways, each specializing in gatewaying to particular networks or from particular groups on campus, are:

- UTCS maintains a gateway to NetNorth (and thence to BITNET), some dial-up connections to UNIX sites in the city, and a few long-distance connections.
- CSRI maintains Datapac connections to CDNNET and the DARPA Internet, as well as long-distance connections to other Canadian universities and U.S. sites.
- Physics has its own Datapac connection, used primarily for CDNNET, and through it can reach many other networks.

Most of the traffic destined for a non-BITNET machine will go through the CSRI gateway. To give an idea of the volume of mail, about 1700 messages go through the UNIX gateways each day, three quarters through CSRI.

continued...

Networking: A UNIX Perspective continued.

The pervasive nature of TCP/IP is evident from the great numbers of machines, both on and off campus, which use it. For example, the mailer on the CSRI gateway uses the same mail transmission protocol to deliver a message to GP UNIX, to the computer of a local company indirectly attached to the campus network, and to a site in Boston, starting it off on a tour through the Internet. Mail sent through the CSRI gateway, to the Internet, through a gateway to BITNET, from there to NetNorth, and back in through the UTCS NetNorth gateway, might take 15-20 minutes for its 5000 mile journey through a dozen machines. Most of the delay is due to congestion at the various point-to-point links along which the message must travel. The delays for a similar "store-and-forward" mail activity on the campus network is measured in seconds. Sending out "News" on UNIX is handled in much the same way, but due to the large volume (two megabytes per day), it is given lower priority. Still, from a central fan-out point, a News item manages to spread to a dozen computers in two to three hours.

There is more to campus networking than electronic mail, however. Network technology has been developed at the University of Toronto in the form of Hubnet. This fibre-optic network was introduced by CSRI researchers some years ago and operates at five times the speed of CSRI's own Ethernet. (A commercial product based on this research and with twice the speed is due out this summer.) Hubnet is used to link several computers belonging to CSRI, Mechanical Engineering, Computer Science, and the Engineering Computing Facility.

A network can be used to connect limited-function workstations with server machines in order to produce a low-cost versatile combination. For example, workstations without a printer can be connected with print servers,and diskless workstations can be connected with disk servers. Because this kind of application needs high-speed communications between processors, the demand for local networking has increased. Where networks already existed, the extra load has added to the demand on the network. Besides the transparent file retrieval and manipulation offered by the server approach, there are programs to transfer files (*ftp*), log into other computers (*rlogin*), and execute commands on other machines (*rsh*).

Another interesting use of networking is interactive human communication. The UNIX *talk* command allows two-way conversation between users on the same or different machines.

Still another use for networking on campus is to provide access to the UTCS MVS system with all its facilities (e.g., plotters, SAS, the Xerox Laser Printer). This is done through a Remote Job Entry facility that operates over the network, using the standard file transfer program to move the information around. Jobs can be edited on a user's local machine, submitted to MVS, and the output returned to the user. This service is generally available and is supported by UTCS. As is the case for MVS, one front-end machine for the Cray supercomputer can be reached through the network from both TCP/IP and DECNET hosts, and the CMS front end can be reached from NetNorth/BITNET.

In fact, in any situation where a shared resource exists, networking increases its utility and accessibility. An example is printer access. Mentioned above is the ability to access the 8700 laser printer (or any other MVS printer). Often it is not possible or appropriate to put a printer directly on a network; instead it is attached to a computer accessible through the network. For computers running UNIX, standard software allows remote access to such devices (for example, the UTCS typesetter and laser printers). Another very popular shared resource is a database of mail routes and site information for about 7000 sites, accessible from anywhere on the TCP/IP network with the appropriate software. Most of the UNIX mailers use this database to route mail to the outside world. Its use has grown exponentially over the last three years.

This has been an informal look (from a UNIX perspective) at the networking activities going on today. Hopefully, it will stimulate awareness, more activity, and perhaps even some innovative ideas about further uses for the networks. ■

ComputerNews: The New Look

Martha Parrott
PARROTT at UTORONTO

The lead articles in this issue tell of major changes at UTCS. Another change, which readers of the July/August issue will have noticed already, reflects the growing importance of microcomputers and desktop publishing: *ComputerNews* is now produced on a Macintosh, using Microsoft Word and Aldus' PageMaker. Our camera-ready copy comes from the Linotronic 100 Typesetter.

The July/August issue represented our first crack at changing the design. As usually happens in such cases, some things worked better than others, and we will be tinkering with the new look for the next few issues. Apart from the overall appearance, the most noticeable change is likely to be an increased use of graphics. Although we have been able to mix graphics with text in several recent issues, the new process makes this easier, and we hope to bring you more articles having greater visual interest. ▨

New Column in ComputerNews

Martha Parrott
PARROTT at UTORONTO

This issue of *ComputerNews* has many references to "Information Technologies," a term that embraces a great variety of ways of using, disseminating, and treating information. As more and more people on campus choose to apply these technological tools to their own needs, the demand for advising of one kind or another increases accordingly. Advising Services and other groups in the Information Centre have always filled a major part of this need, and in its own way *ComputerNews* has offered instruction in full-length articles and short "helpful hints."

Starting with the October issue, we are instituting a question column as an occasional feature in the newsletter. Readers are invited to submit questions they may have about using information technologies. Questions with "column-sized" answers will be dealt with in the column by the appropriate Information Centre staff member. If your question is too complicated for a short answer, we may well use it as the basis for an article.

You may send your questions electronically to PARROTT at UTORONTO, or, if you are on the UTCS Bulletin Board System, to SYSOP (mention that your message is for *ComputerNews*). If you are using regular or campus mail, the address is The Editor, ComputerNews, UTCS, 255 Huron Street, Room 350, Toronto, Ontario M5S 1A1.

Finally, suggestions for a name for the column are welcome. ▨

Noise on Dial-in Lines: Update

Alex Nishri
nishri@gpu.utcs
NISHRI at UTORONTO

Many people are still experiencing noise when using a 1200- or 2400-bits-per-second (bps) modem to connect to UTCS services. A symptom is sporadic, unexpected characters on your screen. In some cases, only a few bursts of random characters will be noticed in an hour. In other cases, the random characters come so quickly that you can't get any work done.

Over the past few months we have reported regularly on the steps being taken to solve this problem. Although Advising initially received complaints from people connecting to UTCS services, we were able to show that the problem was University wide. Since Bell Canada had just installed a new telephone exchange, the CENTREX III, that was the first suspect. Bell Canada cooperated by replacing parts of the CENTREX III in an effort to correct the problem. As a result of this work, some people reported reduced, though not eliminated, noise incidence. Unfortunately, other people found no improvement at all.

In May, we reported to you that Bell Canada had installed some lines to UTCS from another telephone exchange, bypassing the University CENTREX III. When noise was reported by people using *those* lines, it became clear that the problem did not lie in the CENTREX III. Bell Canada now acknowledges that the problem is probably quite widespread throughout the phone network.

Work on the problem did not stop during the summer. Bell technicians, along with Jon Alexander, an Advising Services consultant, have spent evenings visiting people who have reported noise problems. Jon set up a modem and portable computer, while the Bell technicians set up special equipment to monitor the lines. Jon then connected to one of the UTCS services and simulated a typical session. When an unsolicited burst of characters was noticed, it was recorded by the portable computer. The Bell technician then tried to explain what had just happened.

So far, results are not encouraging. When Jon encountered random characters, the Bell technician saw no unusual noise on the line. It would appear that the random characters, which many of us have referred to as "noise," are not noise in the audible sense. That is, there are no audible pops, clicks, or other extraneous sounds heard on the line when the random characters occur.

With audible noise ruled out, other potential causes may be quite complex. Years ago, the telephone network used to be fairly simple, consisting of exchanges that acted as switches to connect wires from one place to another. Today, large parts of the Bell Canada telephone network convert sounds into numbers and process them digitally. Your voice becomes an eight-bit number, transmitted eight thousand times a second. Each telephone conversation, consisting of 64000 bps, can be combined with bits from many other simultaneous telephone conversations and sent over a connection that formerly could handle only one telephone conversation.

To make things more complex, the Bell telephone network is not entirely digital. As sounds go through various types of exchanges and equipment, they may be converted between digital and analog forms several times. Furthermore, the route taken by a telephone connection from your location to the UTCS computers varies, depending on the load on various Bell exchanges at the time of the call. All this is making it very difficult to solve the noise problem.

UTCS realizes that many of you have been frustrated by the noise on dial-in lines. We hope the problem can be solved soon and are cooperating with Bell to this end.

We would appreciate it if you could help us. Please report noisy modem dial-in lines to Jon Alexander at 978-6230 or, using electronic mail, to JON at UTORONTO. ▨

Sharing Microcomputer Experience

Alex Nishri
nishri@gpu.utcs
NISHRI at UTORONTO

The ability to use your microcomputer effectively is enhanced with experience. Getting that experience can be easier if you share your discoveries and solutions with other people. Whether it's "an obvious fact" that never gets stated, or a little known shortcut for the Macintosh, IBM PC, or clone, you can share it with other members of the University community on the UTCS Bulletin Board System (BBS).

The BBS can be accessed from your micocomputer by using a modem over a regular phone line. Access is free and restricted to members of the University community.

Once connected, you may enter the message section of the bulletin board, where you will find messages left by other people. Messages might contain interesting problems, solutions, useful hints, announcements, or suggestions. If you like, you can then reply to any of the messages. You can also add a message on a new topic.

Anytime you put a message on the bulletin board, whether it is in reply to an existing message or on a new topic, you have the choice of making it public or private. Public messages can be read by everyone. Private messages can be read only by individuals whom you specify.

Public messages are also read regularly by Alicia Damley, an Advising Services Consultant. For questions that UTCS can help with, Alicia will put up a reply message or ask an appropriate UTCS Product Specialist to respond.

After you have caught up on messages, you may want to use the files section of the BBS. Hundreds of program and documentation files are stored here. You can browse the index and then take any files you want. This is done by downloading the file, i.e., transmitting the file by phone from the BBS to your microcomputer. The downloading process is a straightforward one.

What sort of programs can you get from the BBS? There are useful utilities, graphics applications, word processors, compilers, and demonstration programs. Many of the programs you can get from the BBS are public domain, i.e., the author of the program has agreed that others can use the program at no charge. Other programs from the BBS are shareware. Shareware programs are distributed for free, but if you find the program of use you should pay a fee. The fee may be stated, or a contribution requested. Although many shareware programs are of very good quality, the requested fee is often a fraction of the cost of a commercial package, because advertising and distribution costs are saved. Both public-domain and shareware programs may have restrictions; for example, commercial use may be forbidden.

To access the BBS, you will need a microcomputer, a modem, and a communications program. (If you do not have a communications program, UTCS can provide one at no charge, although some conditions apply.) Using the modem, telephone 978-6200 if you have a 300-bit-per-second (bps) modem, 978-3959 for 1200 bps, and 978-7239 for 2400 bps. After the modem establishes a connection with UTCS, press the Return key until you are prompted for a "service" or "class". Reply with "BBS", and follow the directions provided.

If you need more assistance in buying a modem, getting a communications package, or accessing the BBS, we would be glad to help you. Please phone us at 978-HELP. ▨

Personal System/2 Updates

Alex Nishri
nishri@gpu.utcs
NISHRI at UTORONTO

In August, IBM announced the Personal System/2 Model 25, the fifth and lowest priced member of the PS/2 family. IBM recommends it for educational, business, and personal use. The Model 25 includes the display and processor in one box, comparable in appearance with the Apple Macintosh Plus and SE.

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Personal System/2 Update continued.

The Model 25 uses the same 8 megahertz (MHz) Intel 8086 microprocessor as the PS/2 Model 30, resulting in a processing speed approximately twice that of an IBM PC-XT. Like the Model 30, the Model 25 can use IBM PC and PC-XT option cards; other members of the PS/2 line can't. The Model 25 accepts one full-length and one three-quarter-length card, accommodating cards up to .8-inch thickness.

Included with the Model 25 is a 12-inch display screen, MCGA graphics, a keyboard, one 3.5-inch 720KB capacity diskette drive, 512KB RAM, a serial port, a parallel port, a mouse port, and a .25-inch headphone jack. Two versions of the Model 25 are available, one with a colour and the other a monochrome display. A further choice is provided between the IBM Space Saving Keyboard and the Enhanced Keyboard. A Model 25 with a monochrome display and space-saving keyboard lists at $2095 (without educational discounts). Switching to the colour display is $500 more. Other extras include the option of buying a second drive, additional RAM to reach the maximum 640KB, and a carrying case.

Unlike the Apple Macintosh line, IBM does not include an operating system with its PC and PS/2 computers. (The operating system is a program that must be run before anything else can be done with the computer.) However, new with the Model 25 is a Collegiate Kit, an optional package that IBM has targeted for faculty, students, and staff at higher-education institutions. The package requires 640KB and two disk drives, so a minimal Model 25 cannot be used. The Collegiate Kit can also be run on a dual-disk-drive Model 30.

The Collegiate Kit provides the PC-DOS 3.3 operating system and Microsoft Windows 1.04, which permits the use of Macintosh-like windows. Microsoft Windows comes with Windows Write, Windows Paint, Windows Cardfile, and Windows Desktop Accessories. IBM claims it has rearranged parts of PC-DOS and Windows onto three diskettes for ease of use. To start word processing with a new Model 25, two of these diskettes are inserted, one into each drive, and the machine powered on. Also included with the Collegiate Kit is the IBM PS/2 mouse, and four blank diskettes. The package lists for $485 (without educational discounts).

Also in August, IBM announced a new version of the Model 80, the 8580-311. The most expensive in the PS/2 family, this computer features a 20MHz Intel 80386 32-bit processor, 2MB of 80-nanosecond RAM expandable to 16MB, a 314MB 23-millisecond-seek-time fixed disk expandable to 628MB, and a 3.5-inch 1.44MB capacity diskette drive. The list price starts at $21,795.

At the time of writing we have not had an opportunity to try out a Model 25, but we hope to evaluate one soon. UTCS already has Microsoft Windows in the Micro Lab for those wishing a demonstration. For more information, please phone 978-HELP. ▩

DOS 3.3 Problems

Alex Nishri
nishri@gpu.utcs
NISHRI at UTORONTO

At the SHARE conference in August, IBM released a fix to some problems that show up when DOS 3.3 is used with certain Personal System/2 models. In summary these are:

1. IBM and other vendor produced software that is replicated on 720KB industrial replicators cannot be read or installed on the Model 50, 60, and 80 machines. A "Not Ready Error Drive A" message will be produced. (A bypass is to copy the diskette on a machine not in the list above prior to use.)
2. The interrupt controller on the Models 50 and 60 exhibits an intermittent problem resulting in a "Diskette Drive Not Ready" or a "Fixed Disk General Failure" message.
3. When FORMAT is used on a Model 50, 60, or 80, a "Track 0 bad or invalid media" message may be produced if multiple diskettes are being formatted. (A bypass is to say "N" to the "Format another (Y/N)?" prompt.)

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DOS 3.3 roblems oontinued.

4. When power is interrupted or switched on and off quickly on a PS/2, an error may result. This happens because the system is repowered before the keyboard is ready.

A fix and the complete text of the problems was made available at SHARE. The fix consists of a new disk driver and is easy to install. For more information, please call 978-HELP.

New Macintosh MultiFinder

Alex Nishri
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NISHRI at UTORONTO

Apple has announced a new release of Finder for the Macintosh. Finder is the software that shows you a desktop with icons and allows you to start up applications by clicking on them. The new release will be known as MultiFinder, and the biggest improvement is that you can start up more than one application at the same time.

For example, you might start up MacPaint and MacWrite. Once you have done so, the windows for both MacPaint and MacWrite are visible on your screen at the same time. To switch to using an application, you can just click on its window. Thus, you could be drawing a picture in MacPaint, and then click on the adjacent MacWrite window to write the accompanying text. You could also cut the drawing from the MacPaint window and paste it below the accompanying text in the MacWrite document.

Up to thirty applications can be open simultaneously, although this is limited by the amount of Random Access Memory (RAM) available. On a Macintosh with only one megabyte of memory, you would probably have only two or three applications open at once.

Current Macintosh users will be pleased to know that the MultiFinder retains the appearance of the Finder. If you do not use the new features, everything looks the same. If you open more than one application at a time, a small icon in the upper right corner of the screen indicates which application you are currently working in. To switch, you either click on a window belonging to another application or select from a list in the Apple menu.

The MultiFinder will be available sometime in September and will be included with all new Macintosh computers sold after then. Current Macintosh owners will be able to buy an upgrade.

We would like to thank Apple Canada for showing us an advance copy of MultiFinder to prepare this article. We expect to have our own copy as soon as it becomes available. For more information about MultiFinder or Finder, please call 978-HELP.

Macintosh SE problem

Alex Nishri
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NISHRI at UTORONTO

Those using a Macintosh SE with two diskette drives may notice that the upper disk drive performs considerably slower than the lower drive. This results from a software problem that causes the upper drive to spin down erroneously. Apple intends to fix it in a future release of the System File.

UNIVERSITY OF TORONTO
COMPUTING SERVICES (UTCS)
Hours of Service

Thanksgiving Weekend (October 10, 11, 12)

The hours of service for the above holiday weekend will be announced via system Broadcast and HOTNEWS messages closer to the holiday.

FIRST INTERNATIONAL CONFERENCE ON INDUSTRIAL AND APPLIED MATHEMATICS — PARIS, June 29 - July 3, 1987

Dr. Andrzej J. Pindor
APINDOR at UTORONTO

The conference was organized by four national societies for applied mathematics – GAMM (Germany), IMA (UK), SIAM (USA), and SMAI (France) – and is intended to become a regular event at four-year intervals. The next one is scheduled to take place in Boston in 1991. The number of participants exceeded 1500, with the biggest groups from France (350), the United States (320), Germany (180), and the United Kingdom (120). There were about 70 Canadians.

The conference program included 16 invited presentations, 67 minisymposia, and about 1000 contributed talks. Minisymposia consisted usually of four 30-minute presentations concerning a fairly specific problem, while the contributed talks lasted 15 minutes each and were divided into more general groups (numerical methods, control, statistics, informatics, discrete mathematics, applications, fluids, and mathematical analysis). There were also four poster sessions.

One invited talk, "Mathematics and Computing," by P.D. Lax, discussed what computing has gained from mathematics and vice versa. Other invited talks concentrated on specific fields. C. de Boor described the current research in multivariate splines; F. Natterer, in the lecture "Mathematics and tomography," presented an early history of tomography, the progress it has made under the influence of mathematics and computers, some current problems, and some anticipated future trends; R. Azencott, in "Stochastic processes and image analysis," described the results obtained at the University of Paris XI (Sud) by himself in association with B. Chalmond and L. Younes; and M.J.D. Powell, in "Algorithms for nonlinear equations and unconstrained optimization," discussed basic techniques of algorithms for these problems and surveyed recent developments.

Probably, the best attended and most controversial minisymposium was the one on "The proposed FORTRAN 8X programming language." Highlights of the new version of FORTRAN were discussed by the members of the FORTRAN Committee, and then a user's perspective was presented by a consultant to the Committee. The new FORTRAN is planned to have a large number of new features in addition to all the features of FORTRAN-77; the aim is to modernize the language without upsetting people who are still using vast numbers of programs written in older versions. Still, concerns about the new FORTRAN were voiced. Some people complained that a few features, present in early drafts, such as pointers, were dropped from the most recent one. Others felt that the modifications go too far. In fact, IBM and DEC are altogether very unhappy about the proposed new standard. Its future is not at all certain.

Another minisymposium discussed a number of expert systems under development: GLIMPSE, a statistical expert system using GLIM as an algorithmic machine; ELLIPTIC Expert, an expert system for elliptic partial differential equations; NEXUS, an expert system for scientific computing; and an expert system for the NAg library, guiding a user towards the most appropriate routine and helping in its use.

The contributed papers discussed very specific problems and algorithms proposed by authors and sometimes presented specific programs or packages. Some authors are willing to share their programs with a wider community. For instance, W. Shoenauer of Karlsruhe University in Germany described FIDOSOL (finite difference solver), a package for the solution of nonlinear systems of 2D or 3D elliptic and parabolic partial differential equations in a rectangular domain. It has been developed primarily for the solution of large problems on vector computers and is available to noncommercial users for a small handling fee. M. Ries, from Trier University in Germany, presented a microcomputer package for interactive data representation. This program is also available to noncommercial users.

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FIRST INTERNATIONAL CONFERENCE continued.

Several minisymposia and a number of contributed talks were devoted to parallel architecture and vector computers, describing experience with using them, problems with writing efficient codes, and their impact in different fields.

Running parallel to the Conference was the ICIAM 87 Exhibition, where a number of software vendors and publishing houses presented their products. For instance, the Symbolic Manipulation Program (SMP) was presented. According to the vendor, it is the most advanced and complete mathematics system available. The program is claimed to compare well to MACSYMA in a range of features, but its syntax seems to be somewhat simpler (at least at first glance). SMP is written in C, and the vendor stresses that this is an advantage over MACSYMA, which is written in LISP.

There will be no proceedings of the Conference. However, abstracts of the talks and some preprints are available for review. Please contact me at 978-5045 if you are interested. ▨

BMDP '87 Available for Testing on MVS

Dr. W. Fehlner
FEHLNER at UTORONTO

BMDP '87 on MVS is now available for user testing. You can access it by specifying LEVEL=87 in either the BMDP or BMDPOPEN catalogued procedures. Just as with the production release ('85), BMDP '87 is linked with the VS FORTRAN library; thus, the FORTRAN code you supply when using BMDPOPEN must adhere to FORTRAN-77 rules. This new release can also be used from within SAS by specifying BMDLEVL=87 in your EXEC SAS statement and then using PROC BMDP.

BMDP '87 includes changes and extensions to 35 of the 40 BMDP programs. One or more problems are corrected in 27 programs. Enhancements and new features are added to 25 programs. There are also a few general enhancements to paragraphs common to most programs.

These changes are fully described in a 21-page document, "NEWS for 1987 Release of BMDP Statistical Software," which is available for reference in the UTCS Information Office. This document and the *BMDP Statistical Software Manual: 1985 Printing* give you access to all the new features.

Some highlights of the 1987 Release include:

General Enhancements.

- There is now a PORT option in the SAVE and INPUT paragraphs, which allows creating and reading portable BMDP system files.
- The ALPHA option in the GROUP paragraph allows a variable with character values to be used to identify subgroups in the data.
- All BMDP programs now have output formats that are compatible with the LINESIZE=80 request in the PRINT paragraph.

3D – Comparisons using T-tests

- You can now compare variables rather than groups by using the MATCHED paragraph.
- The Mann-Whitney rank-sum test, the sign test, the Wilcoxon signed-rank test, and the Spearman correlation can be requested with the NONPAR option.

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BMDP '87 Available for Testing continued.

- Any number of MATCHED, ONEGROUP, TWOGROUP, or TEST paragraphs may be specified before /END.

7D – Description of Groups with Histograms and ANOVA

- An option to print group contrasts has been added.
- Multiple comparison tests, multiple range tests, and confidence intervals have been added as options.
- A percentage of cases can be trimmed from each end of a histogram. The maximum number of cases to be trimmed can be set separately.
- Diagnostic plots use letters or numbers as plot points to specify the groups.

4F – Multiway Frequency Tables - Measures of Association

- A number of problems involving special cases, such as tables wider than one page and models with marginal zeroes, have been corrected.
- Log-linear analysis is available for two-way tables.

1L – Life Tables and Survival Functions

- The Tarone-Ware test has been added to 1L. Trend forms of Tarone-Ware, Mantel, and Breslow statistics are now available to use with subgroups that have a monotone ordering, such as in dose-response data.
- Plot options have been extended, and some new plots have been added.
- Estimates of the quantiles of the survival function and the standard error of these estimates are printed for the product-limit method.

2R – Stepwise Regression

- There are now 21 diagnostic variables that can be printed or plotted, and 17 of these can be saved for further analysis.
- Additional options are available in the PLOT paragraph, including printing extreme values and printing simulation envelopes in half-normal plots.

AR – Derivative-Free Non-Linear Regression

- The built-in functions available in 3R (non-linear regression) have been added to AR.
- When case weights are specified, weighted (rather than unweighted) residuals are plotted in the normal and detrended normal probability plots.
- Two more diagnostic variables are printed for each case.

LR – Stepwise Logistic Regression

- Fractional counts of the number of successes and failures can be analyzed.
- Four new diagnostic variables can be printed, plotted, or saved.
- The constant in the model can be moved in or out of the model.
- Multiple comparisons are now available for the Kruskal-Wallis and Friedman tests.

The 1987 release of BMDP for CMS is expected to arrive sometime in the next few months. BMDP '87 will remain in user test on MVS at least until the 1987 release has been installed and tested on CMS.

If you have questions or problems concerning BMDP '87, please contact Advising Services at 978-HELP. ▨

Information Centre Orientation

Alex Nishri
nishri@gpu.utcs
NISHRI at UTORONTO

Are you confused about the information technology available to you from UTCS? Again this year, we are offering talks to groups of interested faculty members, graduate students, and staff. From statistics products to fibre-optic technology, from electronic mail to word processing, and much much more, we describe the services we offer and how to get the assistance you need. We cover services designed for microcomputer users, such as the Micro Lab and the Micro Laser Printing facilities, as well as those designed for mainframe users. The talks can be customized for your needs. To arrange one for your department, please contact Reinhard Schuller at 978-6878. ▨

News About Microcomputer Short Courses

Martha Parrott
PARROTT at UTORONTO

People who have taken our short courses sometimes complain, justly, that there are too many levels of computer experience among the participants; inevitably some people feel rushed, while others feel they are waiting for their classmates to learn the basics. This kind of problem is common to nearly all classroom situations.

An obvious solution is to separate the beginners from the experienced and teach them the basics *before* they get to the course they actually wanted to take (e.g., SAS or WordPerfect). Ultimately, of course, the same problem will occur in a "basics" course, since there are always levels, even among "absolute beginners."

Another factor to be considered is time, however. All of our introductory courses are either ten or fifteen hours long. Many people find it difficult enough to reschedule their time around one course, without having to worry about two. Most desirable for them, therefore, is a single course that begins with the power-on switch and finishes with a working knowledge of an applications package.

There is no completely satisfactory answer to these problems. After some consideration, we have decided not to remove the basic introduction to microcomputers from our applications courses; however, that time will be optional for those who are already using a micro.

For the "absolute beginners" who want some background in computers before they tackle an application (or who aren't even sure if they *want* an application), we are offering two new three-hour seminars on microcomputer concepts. In most ways, the seminars are the same, but one is geared to the Macintosh world, the other to the PC world. People who do not know what kind of machine they might eventually use could take either one.

One of the objectives of the seminars is to give participants an introduction to the physical components of computers, and to give them an opportunity to use a computer, perhaps for the first time. The main purpose, however, is to help people understand, in a non-technical way, just what a computer is, what kinds of things it does, and how it does them. Indeed, we have found that even people who have been using a micro for some time may be confused about what is actually going on inside the beige box. Their confusion may lead to computing problems later on.

Several other courses have also been developed or introduced over the summer. An intermediate-level course on SAS for the PC has already been taught, as has an introductory word-processing course on the Macintosh version of Microsoft Word. Starting this month, an introductory course on DOS (the operating system for the PC and compatibles) will also be available and, in October, a seminar on desktop publishing. Still in development are courses on dBASE III, Lotus 1-2-3, and PageMaker. ▨

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News about Microcomputer Courses continued.

Course descriptions of all UTCS noncredit courses may be picked up in Room 308 of the Koffler Centre and at the Information Office in the Engineering Annex, Room 206.

For information on schedules and fees, please call Irene Rosiecki at 978-4565. ▨

UTCS Noncredit Computer Courses

Irene Rosiecki
ROSIECKI at UTORONTO

In order to meet the demands of our users and the growing need for microcomputers in their everyday applications, UTCS has developed new courses dealing with both the IBM PC and compatibles, and the Macintosh computers. All of the courses at UTCS are hands-on and are offered on an ongoing basis every 4-6 weeks.

To provide each student with a microcomputer during the course, class size is kept to a minimum. Registration is handled on a first-come, first-served basis.

Additional courses (Lotus 1-2-3, dBASE III, and Desktop Publishing) are still in development but will be available later in the fall. For a complete list of UTCS Computer Courses (both mainframe and microcomputer), and to find out about course fees, please contact the:

UTCS Education Office
11 King's College Road
Room 207
Phone: 978-4565

Listed below are our course offerings for September and October:

CONIBM101 - Microcomputer Concepts (IBM)
Date: October 14, 1987
Time: 2:00 - 5:00 p.m.

CONMAC101 - Microcomputer Concepts (Macintosh)
Date: October 16, 1987
Time: 2:00 - 5:00 p.m.

DOS101 - Introduction to DOS
Date: September 21-25, 1987
Time: 9:00 - 11:00 a.m.

Date: October 19-23, 1987
Time: 9:00 - 11:00 a.m.

MSWORD101 - Introduction to the Macintosh and Microsoft Word
Date: September 21-25, 1987
Time: 1:00 - 4:00 p.m.

Date: October 19-23, 1987
Time: 11:00 - 2:00 p.m.

SASCMS101 - Introduction to SAS and CMS
Date: September 28 - October 9, 1987
Time: 1:00 - 3:00 p.m.

SASPC101 - Introduction to SAS on the IBM PC
Date: October 5-9, 1987
Time: 11:00 - 1:00 p.m.

WRDPERF101 - Introduction to WordPerfect for the Academic
Date: October 26-30, 1987
Time: 1:00 - 4:00 p.m.

WRDPERF302 - Advanced Administrative WordPerfect Topics
Date: September 21-25, 1987
Time: 11:00 - 1:00 p.m.

ProComm Communications Program Seminar

October 15, 1987
2:00 - 4:00 p.m.

ProComm is a general purpose communications program currently available to all U of T faculty, staff, and students. ProComm is the resident communications program in the Education Facility.

A seminar has been scheduled to introduce ProComm and its various features: terminal emulation (a number of popular ones will be reviewed); the dialing directory; file transfer protocols, such as Kermit and XMODEM; command files to control automatic logon and unattended operation; and the DOS gateway, which allows you to execute DOS commands and other programs while you are still in ProComm.

The seminar is free of charge; copies of ProComm are also made available at no charge, but you must bring your own diskettes.

To reserve a place in this seminar, please phone me at 978-4565.

Irene Rosiecki
ROSIECKI at UTORONTO

Free NetNorth (Electronic Mail) Demonstration

October 15, 1987
4:00 - 5:00 p.m.

October 16, 1987
11:00 - 12:00 noon

Anyone interested in sending documents to colleagues or friends reliably, quickly, and inexpensively will not want to miss this demonstration. We will introduce you to the NetNorth/BITNET/EARN communications network, which is accessible from the CMS system. This network connects more than a thousand universities and research institutes in Europe, Asia, and North America. Sending documents or files over the network is very easy to learn.

The demonstration will last just under an hour. Included will be how to send mail and files to another institution and how to talk directly to someone on the network.

Space is limited. If you would like to attend, please contact me at 978-4565 to reserve a place.

Irene Rosiecki
ROSIECKI at UTORONTO

Personnel Changes

Charles Painter, from Communications and Technical Support, is leaving UTCS to continue his education.

Norman Baccari has been promoted from Computer Operator I to Computer Operator II.

Henry Lam and **Edward Schewchuk** have joined UTCS Operations as Computer Operators. ▨

Accounting Services

Marg Doherty
DOHERTY at UTORONTO

The Accounting Services Office, located in McLennan Physical Laboratories, Room 337, handles setting up, changing, and deleting accounts and access codes. This group also answers inquiries about the status of accounts and in general assists customers with accounting problems or concerns. Accounting Services hours are 9:00 a.m. to 5:00 p.m., Monday through Friday.

Customers who plan to use University funds for computing, and who are not familiar with University or UTCS accounting sytems and procedures, should refer to the UTCS GUIDE TO PRODUCTS AND SERVICES: Accounting, available from the Accounting Services Office. Customers planning to use external funding should contact the UTCS Marketing Consultant at 978-6875.

Funding of accounts is done by raising an Encumbrance Memo, a blanket purchase order for use within the University. This form, as well as the Encumbrance Memo Change form, is available from the Purchasing Department, 7th Floor, 215 Huron St., 978-2353. The order form for these includes instructions on their use.

An Account Balance letter is sent to alert the account holder when the remaining balance reaches 20% of the account's total allocation. If additional allocation is not made, the account is locked on the first day it shows a negative (overdrawn) balance.

The Internal Rate Schedule is published towards the back of this issue of *ComputerNews.* Copies of this and the External and Commercial schedules are available from the Accounting Services Office, the UTCS Information Office (Room 206, Engineering Annex), or Ihor Prociuk at 978-6875.

Special Usage Credit Offer

Marg Doherty
DOHERTY at UTORONTO

Once again, UTCS is offering Departments a special usage credit. To qualify, a Department must commit to spending at least as much as it did last year on machine-based services for instructional purposes. It will then receive 100% credit towards additional computing to the end of the fiscal year. (Note: in the case of research funds, the credit is 50%.)

Please call Marg Doherty at 978-8697 for a copy of the "UTCS Usage Credit Agreement: Terms and Conditions." Application for this offer must be made in writing by October 30.

Protect Your Codes

Marg Doherty
DOHERTY at UTORONTO

Users should take the following precautions to ensure optimal security for their Service Access Codes (SACs).

1. Think of your SAC and password as a credit card or blank cheque — **Don't Lose Them.**
2. **Do Not Imbed Job Statements** in datasets.
3. **Obscure the Password** at the start of your terminal session.
4. **Avoid Shared SACs** by establishing a separate SAC for each user.
5. **Change Your Password** at regular, frequent intervals.
6. Instruct the Accounting Services Office to **Lock Your SAC** if you do not plan to use it for a period of time.
7. **Set Expiry Dates** for SACs of limited duration.
8. **Watch the Balance or Accumulated Usage** to determine whether unauthorized activity is taking place on your SAC.
9. **Request a Spending Limit** on the SAC.

St. George Campus — Undergraduate and Research Access to UTCS

Vera Cabanus
vcabanus@gpu.utcs

Engineering Annex, 11 King's College Road, Floors 1 and 2

The Annex is composed of two areas, the General Purpose Facility and the Computer Disciplines Facility (CDF).

The General Purpose Facility has 16 public terminals connected to Network Terminal Servers (NTS). Twelve CRT terminals are in Room 103, and four LA36 hardcopy terminals in Room 107B. From these, any UTCS user may access the IBM MVS system (TSO, WYLBUR, APL), the VM system (CMS), or GP UNIX. For output, the facility provides a Gould Plotter and an SSI QT600 line printer in Room 103. For assistance in using any of these machines, please see the Site Coordinator in Room 107A.

The Annex is also the site of the Computer Disciplines Facility. This facility is managed by UTCS for the Department of Computer Science. Currently, there are two VAXs running 4.3 Berkeley UNIX to support approximately 100 terminals in Rooms 107, 201, and 203. These terminals are hardwired to the VAXs and are used exclusively by Computer Science students.

Facilities in the Engineering Annex are open 24 hours a day.

Robarts Library, 130 St. George Street, Room 1061A

The lower level of Robarts Library houses 16 public terminals that allow users access to any UTCS general purpose system (CMS, TSO, WYLBUR, UNIX, APL) via PACX.

Also located in the room are 28 Texas Instruments PCs (CDF/PC) which are dedicated to undergraduate computing in Computer Science. There is also one XT-100 terminal, which is connected to a VAX 8200 running VMS at Erindale College. The Robarts Library facility has an SSI printer that supports not only PACX users and CDF/PCs but also the output from Erindale's VMS machine.

This room is available to researchers and undergraduate users during Library business hours, which for most of the year are as follows:

Monday through Friday	08:30 to 24:00
Saturday	09:00 to 17:00
Sunday	13:00 to 22:00

There is no full-time Site Coordinator.

Arts and Science, Sidney Smith Building, 100 St. George Street, Rooms 2105, 1071

The 24 public terminals available in Room 2105 are connected to Network Terminal Servers (NTS). Again, any of these terminals can access CMS, TSO, WYLBUR, APL, or GP UNIX. However, the access method is slightly different from the one used in Robarts Library, so consult the signs posted in the room. Should you require further assistance, please see the Site Coordinator in Room 2100. An SSI printer is available in this room. Again, this facility is shared by both research and undergraduate users.

On the first floor, in Room 1071, UTCS operates 32 Texas Instuments PCs dedicated to undergraduate computing in Computer Science (CDF/PC). The networked PCs share an SSI printer, which is also located in this room.

Facilities in Sidney Smith Building are open as follows:

Monday through Sunday	07:00 to 24:00

St. Michael's College, 121 St. Joseph Street, Room 107

This site contains 23 PCs for Computer Science undergraduate computing and nine public terminals connected to PACX. Any of these terminals can access any system available via PACX. Both facilities (CDF/PC and public terminals) share an SSI printer.

continued...

St. George Campus continued.

During the school year (September through May), this site is open 24 hours a day.

There is no full-time Site Coordinator at this location.

Trinity College, 6 Hoskin Avenue, Room 24

The facility in this College can accommodate only CMS users (four termainals) and CDF/PC users (six Texas Instruments PCs). There is a Dataroyal Printer for CMS users and a DEC LA120 printer for Computer Science students.

During the school year (September through May), this site is open daily, from 08:00 to 22:00.

Victoria College, 73 Queen's Park Crescent, 1st Floor

There are three public terminals connected to PACX. Printing for public terminals is not available at Victoria College.

Five Texas Instruments PCs (CDF/PC) are available for Computer Science undergraduate computing and are connected to a DEC LA120 printer.

During the school year (September through May), the facility is available:

Monday through Friday 08:30 to 23:00

Welcome Back – Erindale

Joe Lim
joe@erin.decnet

Welcome back, everyone! The Erindale College Computer Centre has seen two changes during the summer. Gone is Howard Lem to take a new position at the St. George Campus; Elvis Lee is taking over Howard's responsibilities here at Erindale. Also, a new service is being provided for the research community in the form of a networked PC-XT and Apple Macintosh. This network will provide researchers with access to our LaserWriter from any machine: a VAX, the PC, or the Mac.

The Computer Centre is still providing services through its two VAX systems. The VAX 8200, running Version 4.5 of VMS, supports the following software packages: SCRIBE, Minitab, SAS and SAS/GRAPH, VMS FORTRAN, TOPOS (graphics), Kermit, and SPSS^{x}. Other equipment for the VAX 8200 includes a Facit letter-quality printer, an HP 7580 Plotter, an Apple LaserWriter for pseudotypesetting, and a Scan-Tron Optical Scanner for multiple-choice examinations in certain undergraduate courses.

This system is networked via a 4800-bps DECNET link to a MicroVAX II on the St. George campus. This network allows file transfers to other systems on campus and provides a Remote Job Entry link for submissions to the IBM systems. The 8200 also serves as a front end to the Cray supercomputer. Dial-up facilities are provided only for research users on the system.

The other system at Erindale is a VAX-11/750 running 4.3 Berkeley UNIX. This machine is primarily used for Computer Science courses. It is networked via a 4800-bps TCP/IP link to the downtown Computer Disciplines Facility, which allows for file transfers. Dial-up facilities are provided for instructors and students using this system.

Both machines are accessible from hardwired terminals located in Rooms 2045 and 2040 in the South Building, Room 235 in the North Building, and Room 1061A in the Robarts Library. In addition, terminals on the

continued...

Erindale College continued.

InterLAN Terminal Server Network provide access not only to the two machines at Erindale, but also via PACX to the UTCS machines on the St. George campus.

Here is a summary of the services available at Erindale (all terminals are XT-100s):

- Room 2040 of the South Building has 6 terminals connected to UNIX and 12 connected to VMS; all are available for student use 24 hours a day.
- Room 2045 of the South Building has 26 terminals connected to UNIX, available for student use 24 hours a day.
- Room 2039 of the South Building houses three terminals connected to VMS and two connected to NTS; these are for researchers' use only. Access is restricted to office hours.
- Room 235 of the North Building contains six terminals connected to VMS and two connected to NTS, available for student use. Access is restricted to building hours.
- Room 1061A (located at Robarts Library) houses one XT-100 terminal connected to VMS; this room is for Erindale researchers only.

If you have any questions about the Erindale Computer Centre, please call me at 828-5311.

THE
4TH SEMIREGULAR
HONEST-TO-GOODNESS
UTCS

GARAGE SALE

• TERMINALS •
• MODEMS •
• PRINTERS •
• Digital PDP 11 SYSTEM •
• Digital PERIPHERAL PRODUCTS •

Contact:
Mike Konoby
978-4549
Monday - Friday
8:30 am - 4:00 pm

Terms: First come, first served

Documents at UTCS

All vendor-produced documentation may be ordered through the UTCS Information Office, Room 206, Engineering Annex. UTCS documents and selected vendor documents are also stocked there for purchase. For more information on prices, call Dale Wright at 978-4990. Whenever feasible, documents are made available online, and users are encouraged to print their own copies. On the MVS and VM machines, special commands have been provided for this purpose.

To print online documents on:

IBM MVS
WYLBUR users type "do document?"
TSO users type "help document"
APL users type ")LOAD 1 UTCSGUIDE<RETURN>HELP"

IBM VM/CMS
Type "help document"

GP UNIX
Use *ipr* command

In these examples, the document to be printed is the UTCS Guide to Census Tapes (MANUAL/LISTING=CENSUS).
<RETURN> means RETURN or ENTER key.

TSO: document census forms(yxle) <RETURN>

WYLBUR: do document <RETURN> and respond to the prompts.

CMS: document <RETURN> <RETURN>
laser census listing (forms yxle <RETURN>

GP UNIX: nohup ipr -8p -fyxle /usr/doc/utcs/census & <RETURN>

UTCS Documents in hardcopy:

New:

Previously announced:
- Academic's Guide to Microcomputer Systems
- Character Sets for Highspeed Printing
- UTCS GUIDE TO PRODUCTS AND SERVICES: Introduction
- UTCS GUIDE TO PRODUCTS AND SERVICES: Basics
- UTCS GUIDE TO PRODUCTS AND SERVICES: Accounting
- UTCS Catalogue: Access, Part 1
- UTCS Catalogue: Access, Part 2
- UTCS Catalogue: IBM MVS Utilities
- UTCS Catalogue: Numerical Products
- UTCS Catalogue: Statistics Products
- UTCS Catalogue: Text Products
- UTCS Guide to Census Tapes
- UTCS Guide to Tape Usage on VM/CMS
- UTCS Guide to Kermit
- UTCS Guide to Micro File Transfer Service
- UTCS Guide to Text Processing on GP UNIX

UTCS Documents online	MVS MANUAL	CMS LISTING	GP UNIX	Forms Code
New:				
Previously announced:				
UTCS GUIDE TO PRODUCTS AND SERVICES: Introduction	INTRO	INTRO	/usr/doc/utcs/intro	*
UTCS GUIDE TO PRODUCTS AND SERVICES: Basics	BASICS	BASICS	/usr/doc/utcs/basics	*
UTCS Catalogue: Access, Part 1	ACCESS1	ACCESS1	/usr/doc/utcs/access1	*
UTCS Catalogue: Access, Part 2	ACCESS2		/usr/doc/utcs/access2	*
UTCS Catalogue: IBM MVS Utilities	MVSUTIL	MVSUTIL		*
Product-Function List	UTILLIST	UTILLIST		BXQD
UTCS Catalogue: Numerical Products	NUMCAT	NUMCAT		*
Product-Function List	NUMLIST	NUMLIST		BXQD
UTCS Catalogue: Statistics Products	STATCAT	STATCAT		*
Product-Function List	STATLIST	STATLIST		BXQD
UTCS Catalogue: Text Products	TEXTCAT	TEXTCAT	/usr/doc/utcs/textcat	*
UTCS Guide to BMDP	BMDP	BMDP		*
UTCS Guide to Census Tapes	CENSUS	CENSUS	/usr/doc/utcs/census	*
UTCS Guide to GP UNIX			/usr/doc/utcs/gpunix	*
UTCS Guide to GPJS	GPJSX	GPJSX	/usr/doc/utcs/gpjs	*
UTCS Guide to Highspeed Printing	PRINT	PRINT	/usr/doc/utcs/print	*

* *Recommended forms code for the 8700 is YXLE unless otherwise stated.*
† *Use the 87set command. Type "help 87set".*

Documents continued

UTCS Documents online	**MVS MANUAL**	**CMS LISTING**	**GP UNIX**	**Forms Code**
New:				
Previously announced:				
UTCS Guide to IBM MVS Online Storage	IBMDISK	IBMDISK		*
UTCS Guide to Kermit	KERMIT	KERMIT	/usr/doc/utcs/kermit	*
UTCS Guide to Micro File Transfer Service	MICROXFR	MICROXFR		*
UTCS Guide to Micro Laser Printing	MICRLASR	MICRLASR		*
UTCS Guide to SAS	SAS	SAS		*
UTCS Guide to SCRIBE		SCRIBE		*
(For printing instructions, see page 1 of document)				
UTCS Guide to Series/1 Terminal Use	SERIES	SERIES		*
3270 Emulation:				
Cybernex APL100 and Volker Craig VC404	CYBER	CYBER		*
DM1520	DM1520	DM1520		*
Hardcopy Terminal	HARDCOPY	HARDCOPY		*
IBM 3101	IBM3101	IBM3101		*
IBM PC Kermit	PCKERMIT	PCKERMIT		*
SOROC IQ	SOROC	SOROC		*
VT52	VT52	VT52		*
VT100	VT100	VT100		*
UTCS Guide to SPSS	SPSS	SPSS		*
UTCS Guide to SUBUTILS	SUBUTILS	SUBUTILS		*
UTCS Guide to Tape Usage on VM/CMS		CMSTAPE		*
UTCS Guide to Text Processing on GP UNIX			/usr/doc/utcs/text	*
UTCS Guide to TFW.MAK in SCRIBE		TFWMAK		*
UTCS Guide to TSO	TSOGD			*
UTCS Guide to UTDSUTIL	UTDSUTIL	UTDSUTIL		*
UTCS Guide to VM/CMS	CMSGD	CMSGD		*
UTCS Guide to WYLBUR	WYLINTRO			*
UTCS Rate Schedule (Commercial)		RATESCOM		†
UTCS Rate Schedule (External)		RATESEXT		†
UTCS Rate Schedule (Internal)		RATESINT		†
UTCS WYLBUR Tutorial	WYLTUTOR			*
Other Documentation online				
Kermit				
Kermit Protocol Manual	KERMITPM	KERMITPM		YXOE
Kermit User Guide	KERMITUG	KERMITUG		YXOF
ProComm				
ProComm Reference Manual	PROCOMM	PROCOMM		YXOE
VM Tape Documents				
TapeMap User's Guide and Reference		TAPEMAP		*
VMTAPE Messages and Codes		VMTMSGS		YXOE
VMTAPE User's Guide		VMTUSER		YXOE
VMSECURE				
VMSECURE User's Guide		VMSECURE		YXOE
Waterloo SCRIPT				
Reference Manual	WSCRPTRF	WSCRPTRF		YXLC
User's Guide	WSCRPTUG	WSCRPTUG		YXLC
Using SCRIPT in MVS/TSO	WSCRPTSO	WSCRPTSO		YXLC
Waterloo SCRIPT and a PostScript Printer	WSCRPTPST	WSCRPTPS		YXLC
Formula Processor Summary	WSCRPTFP	WSCRPTFP		YXLC
GML User's Guide	GMLUG	GMLUG		YXLC
GML Reference Summary	GMLRFSUM	GMLRFSUM		YXLC
OBS WYLBUR				
Messages and Codes	WYLMSGS			YXLD
Qwik Files	WYLQWIK			YXLD
Reference Summary	WYLREFCD			YXLG
Reference Manual	WYLREFMN			YXLD
7.0 Release Guide	WYLREL70			YXLC
User Guide	WYLUSER			YXLD
Electronic Mail				
A User's Guide to Electronic MAIL		MAILBOOK		YXLD

* *Recommended forms code for the 8700 is YXLE unless otherwise stated.*

† *Use the 87set command. Type "help 87set".*

Consulting and Enquiries

Applications Support & Advising Supervisor	Alex Nishri	KC308	978-7109
External Marketing Consultant	Ihor Prociuk	KC308	978-6875
Erindale College	Joe Lim	ER2035	828-5311
Information Office	Dale Wright	EA206	978-4990
Account & Access Code Enquiries (U of T)	tba	MP337	978-8703
Account & Access Code Enquiries (External)	Sylvia May	MP337	978-7148
IBM PC Maintenance	Kam Mark	SF4306	978-5050
Tape Library (Academic Services)	Rosa Esteireiro	MP368	978-7319
Tape Library (Administrative Services)	Miranda Fong	MP368	978-6693
Terminal Rentals	tba	SF4306	978-3787
U of T Computer Library	Stephanie Johnston	EA206	978-2987
UTCS Noncredit Short Courses	Irene Rosiecki	EA207	978-4565

Consulting & Advising Services:	978-HELP
CMS, TSO and GP UNIX userids:	ADVISOR
CMS Userid for mail problems:	POSTMSTR
System Status Enquiries (GP UNIX)	978-4318
System Status Enquiries (IBM)	978-7393
Interactive Services 300 (bps)	978-6200
Interactive Services 1200 (bps)	978-3959
Interactive Services 2400 (bps)	978-7239
Datapac	4320 0056
Telnet	0302043200056
Tymnet	<backspace>DPAC;302043200056

UTCS Directory

Director:	Dr. Warren Jackson	MP350	978-8948	WCJ at UTORONTO *
Associate Director:	Eugene Siciunas	MP350	978-5058	EUGENE at UTORONTO *
Managers:				
Communications & Technical Support	Norman Housley	SF4306	978-4967	NORMAN at UTORONTO *
Internal Systems & Administration	Ron Vander Kraats	MP350	978-4428	RVK at UTORONTO *
Operations	Dr. Bob Chambers	MP350	978-7092	
Systems	Bill Lauriston	MP331	978-3579	BILL at UTORONTO *
Information Centre	Don Gibson	KC308	978-7331	DON at UTORONTO *

Committees on Computing

Committee on Administrative Computing	Chair	Janice Oliver	978-4322	
Research Board Standing Committee on Computing	Chair	Prof. C.C. Gotlieb	978-2986	
UTCS Board	Chair	Prof. D.M. Nowlan	978-4984	NOWLAN at UTORONTO *
Supercompter Users' Group at U of T	Chair	Prof. P.P. Kronberg	978-4971	

Legend

ER = Erindale
KC = Koffler Centre
MP = McLennan Physical Labs
SF = Sandford Fleming

* NetNorth/BITNET/EARN

UTCS Terminal and Advising Sites

Names and Locations

Central Advising Office (CAO), 978-HELP
Engineering Annex (EA, CDF), 11 King's College Road, Rooms 103, 107, 107B, 201, 203
Erindale College (Erin), 828-5339, Mississauga Road, Erindale Campus, Rooms 2005, 2039, 2045
Robarts, Robarts Library, 130 St. George St., Room 1061A
Scarborough College (Scar), 284-3122, Military Trail, Scarborough Campus, Rooms S624, S625, S627, S628, S628A
Sidney Smith (Sidney), 100 St. George St., Rooms 1071, 2105
St.Michael's College, 121 St. Joseph St., Room 107
Trinity College, 6 Hoskins Ave., Room 024
Victoria University, 73 Queens Park Cres.

Sites	Hours of Access				Restrictions*	Advising
	Mon-Thurs	Fri	Sat	Sun		
CAO	10:00-18:00	10:00-18:00	closed	closed	Research	978-HELP
CDF	24 hrs	24 hrs	24 hrs	24 hrs	Undergrads	No
EA	24 hrs	24 hrs	24 hrs	24 hrs	None	978-HELP for Research
Erin (2039) □	9:00-17:00	9:00-17:00	12:00-16:00	12:00-16:00	Research	Rm 2005
(2045)	24 hrs	24 hrs	24 hrs	24 hrs	Undergrads	Rm 2005
(235)†	8:00-22:00	8:00-17:00	closed	closed	None	Rm 2046
Robarts	8:30-24:00	8:30-24:00	9:00-17:00	13:00-22:00	None	978-HELP for Research
Scar	24 hrs•	24 hrs•	24 hrs•	24 hrs•	Research	Rm S626
					Undergrads	Rm S626-A
Sidney	7:00-24:00	7:00-24:00	7:00-24:00	7:00-24:00	None	978-HELP for Research
St.Michael's	24 hrs	24 hrs	24 hrs	24 hrs	None	Arranged by College
Trinity	8:00-22:00	8:00-22:00	8:00-22:00	8:00-22:00	None	Arranged by College
Victoria	8:30-23:00	8:30-23:00	closed	closed	None	Arranged by College

Legend
* Research includes graduates, faculty, staff.
□ Key access available.
• Printers available some of the time.
† Access restricted to building hours.

Advising Hours

CAO	Monday through Friday, 10:00 - 18:00
Scarborough	Monday through Friday, 09:00 - 16:30, Tuesday, 18:00 - 24:00
Erin	Monday through Friday, 09:00 - 20:00

Sites	PACX	Network Terminal Server	CMS	Printers Terminals	CDF/PC
CDF	Y	N	N	Y	N
EA	N	Y	N	Y	N
Erin	Y	Y	N	Y	N
Robarts	Y	N	N	Y	Y
Scar	Y	Y	N	Y	N
Sidney	N	Y	N	Y	Y
St.Michael's	Y	N	N	Y	Y
Trinity	N	N	Y	Y	Y
Victoria	Y	N	N	Y	Y

(Y=yes, N=no)

UTCS Services

UTCS Centrally Owned and Managed

Systems

IBM VM/CMS

- General Purpose Timesharing; access to NetNorth, BITNET, and EARN networks; access to CRAY X-MP
- 4381-R03 processor, 32 megabytes of memory
- CP operating system, VM/SP HPO R4.2
- CMS timesharing system, VM/SP Release 4
- RSCS spooling system, Release 3
- CRAY station Release 4

IBM MVS

- TSO, WYLBUR, APL, Batch
- runs as a preferred guest under VM
- MVS operating system
- Xerox 8700 Laser Printing

GP UNIX
Technical Assistance: 978-8853

- General Purpose Timesharing under SUN UNIX 3.2
- SUN 3/280, 8 megabytes of memory
- access to Linotronic typesetter
- offers a sophisticated and powerful environment for text processing
- offers a sophisticated programming environment suitable for commercial software development or testing
- full access to USENET, an electronic technical information exchange facility
- offers excellent electronic mail facilities and ability to send or receive mail from most computer networks worldwide, such as UUCPNET, ARPANET, NetNorth, BITNET, CSNET, CDNNET

Services

Communications & Technical Support
Primary Phones: 978-3787, 978-4967

- Communications Group provides communications systems, terminals, modems, data channels: consulting and installation.
- Field Service Group installs and maintains communications and computer systems, particularly IBM PCs and Micro Vaxes, on a contract basis or on a cost-per-call basis.
- provides consulting on computer systems technology and installs computer systems
- provides access between the IBM systems and machines using UNIX, VMS and other operating systems. Ethernet, Pronet, and IBM TRN technologies are used over various transmission media including optical fibre. More basic communications techniques are also used for moderate speed links.
- provides consulting on local area networking and installs LANS
- provides access to NetNorth (BITNET), the North American Universities Network; and USENET, the UNIX networking fraternity
- will provide a communications solution to department needs on a contractual basis

User Interface Group
Primary Phone: 978-HELP

- Provides assistance in use of electronic messaging, including use of Local Area Networks (LANS); NetNorth/BITNET/EARN, the world Universities network; CDNNET, the Canadian X.400 network; ARPANET; CSNET; USENET; and other international connections.
- provides advising, consulting and documentation on:
  - command languages, including CMS, TSO, WYLBUR, JCL, and UNIX
  - high level languages, including FORTRAN, and PL/I
  - packages and libraries, including SAS, SPSS-X, BMDP, IMSL, and NAg
  - editors and formatters, including XEDIT, TSO, WYLBUR, ed, SCRIBE, nroff/troff
- provides general micro support
  - selection consulting for hardware and software
  - Micro Lab for evaluation of hardware and software
  - advice on University discounts
  - media conversion and data transfer
  - operates UTCS Microcomputer Bulletin Board System
  - offers Micro Laser Printing Service
  - offers 35mm slide production service using Polaroid Palette
  - administers Local Area Network of PCs for research use
- high quality typesetting
- installs and maintains application packages
- provides courses on the more popular services

> **The principle mandate of UTCS is to plan, implement, and operate facilites and "common-carrier" networks, and to plan and support divisional, departmental or project computer facilities as requested.**

Facilities Managed by UTCS

Administrative Computing

- administrative IMS/VS, DB/DC, DB2, Batch, and TS0
- 4381-R03 processor, 32 megabytes of memory
- MVS operating system

Computer Disciplines Facility/VAX

VAX-11/780, 4 megabytes of memory
VAX-11/750, 4 megabytes of memory

- Computer Science interactive access
- UNIX (Berkeley UNIX 4.3BSD)

Computer Disciplines Facility/PC

- 97 TI Professional Computers connected in a Local Area Network
- introductory Computer Science instruction
- MS-DOS with Turing environment

Erindale College Systems

VAX 8200, 8 megabytes of memory
- instructional access using VMS
- research access

VAX-11/750, 5 megabytes of memory
- instructional access using UNIX (Berkeley UNIX 4.3BSD)

Institutional Relations System

VAX-11/750, 8 megabytes of memory
- database services to the owner departments using VMS

EPAS Facility

- 4361-5 processor, 16 megabytes of memory
- general VM/CMS services to the owner departments

Centre for Large Scale Computation (CLSC)

- Cray Research Inc. X-MP/22
- 2 processors, 2 megawords main memory
- solid state disk (SSD) with 16 megawords of storage
- COS 1.15 operating system
- VAX-11/750 + microVAX II providing VMS front-end services
- VM front-end services provided by UTCS 4381-P02

UTCS Software List

SOFTWARE LIST for MAINFRAME COMPUTERS MVS, VM/CMS, UNIX

Each programming language or package available at UTCS has a support level. In general, Class A Products receive full support, Class B limited support (as time and resources allow), Class C no active support. For complete details of UTCS product support policy, see the UTCS GUIDE TO PRODUCTS AND SERVICES: Introduction.

Package/Compiler	System	Support	Version
Communications			
Kermit	VM/CMS	A	---
	UNIX	B	4C(058)
FTS	VM/CMS	A	---
MAIL/MAILBOOK	VM/CMS	A	86.359
MICROLASER	VM/CMS	A	---
macget/macput	UNIX	C	---
netcopy, netexec, to (NetNorth Tools)	UNIX	B	---
xmodem	UNIX	C	---
ftp,rsh,rlogin,telnet,rep *(Access via TCP/IP to most of the networked machines on all three campuses)*	UNIX	B	---
rn/Pnews	UNIX	B	---
mail,mh,Mail	UNIX	-	---
rje	UNIX	B	---
Graphics			
PLOTBASIC (FORTRAN)	MVS	A	---
	VM/CMS	C	---
PLOTBASIC EXTENDED ROUTINES	MVS	A	---
SAS/GRAPH	MVS	A	5.16
	VM/CMS	A	5.16
SURFACE II	MVS	C	---
Languages			
APL (Sharp)	MVS	C	May 83
ALGOLW (Stanford)	MVS	C	n/a
ASSEMBLER(F)	MVS	C	2.1
	VM/CMS	C	---
A.A.E.C. PASCAL	MVS	C	2.0
Concurrent Euclid	VM/CMS	C	1.9
FORTRAN H EXT.	MVS	B	2.2.1
FORTUTILS	VM/CMS	A	2.2
LISP	MVS	C	---
MARKEXAM	MVS	C	---
PL/C	MVS	C	---
PL/I CHECKOUT COMPILER	MVS	B	1.3.0
	VM/CMS	B	1.3.0
PL/I OPT COMPILER	MVS	B	1.5.1
	VM/CMS	B	1.5.1
REXX	VM/CMS	A	---
SNOBOL 4	MVS	C	3.5
	VM/CMS	C	3.5
SPITBOL	MVS	C	---
Turing	VM/CMS	C	---
UTCS FORTRAN UTILITIES	MVS	B	---
VS COBOL	MVS	C	2.4
VS FORTRAN	MVS	A	1.4.1
	VM/CMS	A	1.4.1
VS Pascal	VM/CMS	C	2.2
WATBOL	MVS	C	V3L2
Waterloo C	VM/CMS	C	1.3
WATFIV	MVS	B	---
	VM/CMS	C	V2L0
WATFOR-77	VM/CMS	A	1.3
cc	UNIX	A	---
f77	UNIX	C	---
ratfor	UNIX	C	BSD std.
ttc	UNIX	C	---
pc	UNIX	C	BSD std.
yacc	UNIX	C	---
awk	UNIX	C	---
adb,dbx	UNIX	C	BSD std.
Numerical			
DYNAMO	MVS	B	4.07
EISPACK	MVS	C	4
FORMAC	MVS	C	---
FUNPACK	MVS	C	---
GPSS	MVS	A	Rel.1, Mod. Level 4

Software List continued

Package/Compiler	System	Support	Version
LINPACK	MVS	C	---
	VM/CMS	C	---
MINOS	MVS	C	4.0
MINPACK	MVS	C	1
MPSX	MVS	C	Rel.1, Mod. Level 6
NAg	MVS	A	Mark 11
Statistical			
BMD	MVS	C	---
BMDP	MVS	A	Level 85, Level 87
	VM/CMS	A	Level 83, Level 85
GENSTAT	MVS	C	4.04B
IMSL	MVS	A	9.2
	VM/CMS	A	9.2
Minitab	VM/CMS	B	5.1
NAg	MVS	A	Mark 11
NTSYS	MVS	C	Dec. 1982
SAS	MVS	A	5.16
	VM/CMS	A	5.16
SPSS	MVS	C	9.1
SPSS^{x}	MVS	A	2.2
	VM/CMS	A	2.2
TSP	MVS	C	3.5
Text Processing			
COGS (Concordance Generating System)	MVS	B	3.1
KWIC	MVS	C	---
OCP (Oxford Concordance Program)	MVS	C	1.4
SCRIBE	VM/CMS	A	4(1400)-1
Waterloo SCRIPT	MVS	B	85.1
	VM/CMS	B	86.1
XEDIT	VM/CMS	A	---
8700 Pseudotypesetting	VM/CMS	A	n/a
MICROLASER	VM/CMS	A	---
ed	UNIX	A	---
vi	UNIX	C	---
cmacs	UNIX	C	---
spell	UNIX	C	---
diction/explain	UNIX	C	---
eqn	UNIX	A	---
tbl	UNIX	A	---
pic	UNIX	C	---
troff	UNIX	A	---
nroff	UNIX	A	---
TeX	UNIX	C	---
Utilities			
DFSORT	MVS	A	6.0
DSMAP	MVS	A	---
FILEBOL	MVS	C	---
FORTUTILS	VM/CMS	A	2.2
GRIPE	MVS	A	---
IBM UTILITIES	MVS		---
IEBGENER	MVS	A	---
IEBCOPY	MVS	A	---
IEHMOVE	MVS	A	---
TAPEPRT	MVS	A	---
TAPEEXRAY	MVS	A	---
TCOPY	MVS	A	---
TPRINT	VM/CMS	C	---
UTCS FORTRAN UTILITIES	MVS	B	---
crypt	UNIX	A	BSD std.
compress	UNIX	C	BSD std.
csh	UNIX	B	BSD std.
diff	UNIX	A	BSD std.
grep	UNIX	A	BSD std.
ipr	UNIX	B	---
learn	UNIX	C	BSD std.
patch	UNIX	C	---
sed	UNIX	A	BSD std.
sort	UNIX	A	BSD std.
sh	UNIX	A	BSD std.
tar	UNIX	A	BSD std.
uniq	UNIX	A	BSD std.

Software List continued

SOFTWARE LIST for MICROCOMPUTERS

The following are microcomputer software packages for which UTCS can provide either support or some information. As with mainframe products, micro packages receive full support (Class A), limited support (Class B), or no active support (Class C). The specific criteria differ from those for mainframe classes and are outlined in the *Academic's Guide to Microcomputer Systems.*

Package/Compiler	Support	Version
Communications		
Kermit (MS-DOS)	A	2.27d
Kermit (APPLE II)	A	---
Kermit (CP/M)	C	---
Kermit (Macintosh)	B	---
PC TALK3	C	---
PC PLOT III	A	---
ProComm	A	2.42 UT
MacTerminal	B	---
WYLBUR/PC	C	---
Database Managers		
AskSam	C	2.2
Clipper	B	---
DATAEASE	B	---
dBASE II (CP/M)	B	---
dBASE II (MS-DOS)	C	--
dBASE III	A	1.1
dBIIICompiler	B	1.1
FoxBASE	C	2.14u
Notebook II	B	2.03
REFLEX	B	---
ViewFinder III	B	---
ZyINDEX	B	---
Graphics		
DR HALO	C	---
Lotus 1-2-3	B	---
Microsoft CHART (Macintosh)		C
MacPaint	B	---
WATCOM GKS	B	---
35mm Express	B	---
Languages		
BASIC	A	---
Microsoft FORTRAN	C	---
TURBO Pascal	B	---
WATFOR-77	A	---
Operating Systems, Utilities		
APPLE Turnover (Macintosh)	A	---
CP/M	B	---
FASTBACK	B	---
PC-DOS	A	---
Sidekick	B	---
SuperKey	C	---
TURBO Lightning	C	---
XenoDisk	A	1.41
Spreadsheet		
APPLEWORKS	C	---
Lotus 1-2-3	B	2.01
Multiplan (Macintosh)	C	---
Statistical		
Minitab	C	---
PowerStat	C	1.04
SAS/PC	A	6.02
SPSS/PC +	A	---
STATPRO	C	2.0c
Word Processing		
Gutenberg Senior	C	---
FinalWord II	B	2.0
MacWrite	C	---
Microsoft Word (Macintosh)		A
Microsoft Word (MS-DOS)	B	2.0
Nota Bene	B	---
T^3	C	---
Volkswriter Scientific	C	---
WordPerfect	A	4.1; 4.2
WordStar	B	---

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